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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Manfred Kogler

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EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT

PAPER NUMBER

2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

57

<b>Office Action Summary</b>	<b>Application No.</b> 10/018,976	<b>Applicant(s)</b> KOGLER, MANFRED	
	<b>Examiner</b> Qutub Ghulamali	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Acknowledgment***

1. This Office Action is responsive to the Remarks/Arguments filed on 12/13/2006.

### ***Response to Remarks/Arguments***

2. Applicant's remarks filed December 13, 2006, have been fully considered but they are not persuasive.

The applicant's remarks/argument that the combined reference of Chung, Mathe and Addelilah fail to show certain features of applicant's invention, the examiner disagrees with remarks presented by the applicant and in response offers the following rebuttal:

The applicant cites claim 1 as "a codec circuit having a programmable digital bandpass filter for matching the filter characteristics of the codec circuit to a transmitted PCM signal. Further, Claim 1 recites at least one programmable digital high-pass filter and at least one programmable digital low-pass filter connected in series. Claim 1 also recites setting filter coefficients for the programmable high-pass and low-pass filters that are each set based on the identification of a PCM signal transmitted through the codec circuit. The PCM signal is identified by means of a signal identification device configured to identify the PCM signal in order to vary a bandpass filter characteristic for the programmable digital bandpass filter". Applicant further acknowledges that Chung discloses transferring PCM samples to a time slot assigning circuit for receiving the

Art Unit: 2611

PCM samples from a PCM highway, wherein a path is recognized (identified) for processing the PCM samples (see col. 4, lines 19-27). The argument presented by the applicant involves:

“ Chung fails to disclose or suggest that any modifications to the codec are taking place based on the type of the PCM signals and setting filter coefficients for the programmable digital high-pass and low-pass filters based on the identification of a PCM signal”.

The examiner's response -

The examiner respectfully would like to draw applicant's attention to Chung, col. 4, lines 9-18, wherein Chung discloses transferring the PCM samples to a time slot assigning circuit for receiving the PCM samples from the PCM highway wherein the path is first recognized (identified) for processing the PCM samples the subscriber line audio processing circuit (SLAC) performs the CODEC and filter functions associated with the subscriber line circuitry in a digital switch, the function involves converting an analog voice signal into digital pulse code modulation (PCM) samples for placing the PCM samples onto a PCM path and converting digital PCM samples received from the PCM path into an analog signal. The process as disclosed describes in an obvious manner the adaptation or identification via input 16 of PCM signal. Further the signal processing circuitry extending between the first input 12 and the first output 14 represents the transmit processing path of the circuit, the transmit signal processing path included among other things a first programmable digital filter (30) a high pass filter (32), the

Art Unit: 2611

attenuator 28 provides signal level correction into filter 30, the filter 30 for example is a six tap finite input response filter which provides frequency response correction (col. 4, lines 19-33, 34-38, 44-51, 52-62; col. 5, lines 22-35). The adaptive coefficient processor 64, with reference to figs. 3-5, performs an iterative least mean square process for generating the digital filter coefficients and the filter coefficients are updated accordingly as disclosed in col. 6, lines 17-49). In the remarks the applicant notes that any modification to the codec is taking place based on the **type** of PCM signal, it is noted that the feature **type** of PCM signal is not the feature recited in the claim. The examiner recognizes a claim is given their broadest reasonable interpretation consistent with the supporting description and although the claims are interpreted in light of the specification, the limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F. 2d 1181, 26 USPQ 2d 1057 (Fed. Cir. 1993). According to the disclosure of a programmable digital bandpass filter of Chung and the disclosure of at least one programmable digital low-pass filter connected in series wherein the filter coefficients for the programmable digital high-pass and low pass filters are set by means of a digital identification device in a codec circuit in which the data transmission frequency is matched via programmable digital bandpass filter means in Mathe, satisfies the claimed subject matter of setting filter coefficients for the programmable digital high pass and low pass filter based on identification of a PCM signal transmitted through a codec circuit wherein the PCM signal is identified by means of identification and would have been obvious to one skilled in the art. The examiner understands that

Art Unit: 2611

the claim limitations are adequately represented in the combined arts of Chung and Mathe and the rejection of claims 1 and 2-9 are still maintained.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung (USP 5,058,047) in view of Mathe (USP 6,389,069) and further in view of Abdelilah et al (USP 6,661,837).

Regarding claim 1, Chung discloses a codec circuit: having a programmable digital bandpass filter (30), for matching the filter characteristics of the codec circuit to a transmitted PCM signal (col. 4, lines 9-13, 19-33, 35-38), having at least one programmable digital high-pass filter (32). Chung further discloses a low pass filter 42 in a receiving side of transmission include a second programmable filter preferably a 6-tap finite input response filter which operates at a 16 KHz sampling rate connected in series with the low pass filter. Chung however, does not explicitly disclose at least one programmable digital low-pass filter connected in series with a high pass filter, wherein the filter coefficients for the programmable digital high-pass and low-pass filters are set, by means of a signal identification device for identification of a PCM

Art Unit: 2611

signal transmitted through the codec circuit, as a function of the transmitted PCM signal in order to vary a bandpass filter characteristic for the programmable digital bandpass filter. This shortcoming is remedied in Mathe. Mathe in a similar field of endeavor discloses (fig. 1): at least one programmable digital low-pass filter (30-38) connected in series with the high pass filter (14) (col. 3, lines 1-15, 49-60; col. 5, lines 9-16; col. 8, lines 20-27). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use programmable high-pass and low-pass filters as taught by Mathe in the circuit of Chung because it can allow better control of lower and upper signal limits with reduced signal errors with control over the composite transfer function of the programmable digital filter and at the same time minimize or mitigate power consumption. However, the combined arts of Chung and Mathe does not explicitly disclose filter coefficients for the programmable digital high-pass and low-pass filters are set by means of a signal identification device for identification of a PCM signal transmitted through the codec circuit, as a function of the transmitted PCM signal in order to vary a band-pass filter characteristic for the programmable digital band-pass filter. Abdelilah in a similar field of endeavor discloses identification of a PCM signal transmitted through the codec circuit, as a function of the transmitted PCM signal in order to vary a band-pass filter characteristic for the programmable digital band-pass filter (the analog signals transmitted from the V.34 modems are sampled at 8000 times per second by a codec upon reaching the PSTN with each sample being represented or quantized by an eight-bit pulse code modulation (PCM) codeword, the codec uses 256, non-uniformly spaced, PCM quantization levels defined according to either the  $\mu$ -law or A-law companding standard) (col. 2, lines 41-48; col. 13, lines 65-67; col. 14, lines 1-10). It would have been obvious to a person of ordinary skill in the

Art Unit: 2611

art at the time the invention was made to utilize an identified PCM signal transmitted through the codec circuit as taught by Abdelilah in the combination of Chung and Mathe because filter coefficients for the programmable high pass and low pass filters can be set to match the sampling rate of the transmitter with the sampling rate of the receiver by interpolation (col. 8, lines 36-49, 53-60).

Regarding claim 2, Chung discloses setting filter coefficients are stored in coefficient memory devices, which are associated with the programmable digital high-pass and low-pass filters (col. 5, lines 21-30).

Regarding claim 3, Chung discloses the memory devices can be in the form of a random access memory (RAM) (col. 8, lines 1-3).

Regarding claim 4, Chung discloses memory devices are connected via coefficient setting lines to the signal identification device (col. 7, lines 64-67; col. 8, lines 1-3).

Regarding claim 5, Chung discloses programmable digital filters ((x) 30 and (40)) can be each seventh-order filters (col. 3, lines 23-30; col. 4, lines 35-37, 52-55).

Regarding claims 6-9, Chung discloses programmable filters whose roll-off (cut-off) frequencies of the band-pass filter are set by setting the filter coefficients of the digital high-pass filter quite easily and is well known in the art of filter design.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



US Patents:

US patent (6,341,360) to Abdelilah et al.

US patent (6,006,189) to Strawczynski et al.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG

March 16, 2007.

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER